

Iowa Judicial Branch
Digital Audio Recording Technology (DART) Committee
Notes from the 2nd Meeting (Final)
June 26, 2009; Des Moines

16 Committee members in attendance; two were absent: Martha Lucey and John French
State court administration staff attending: John Goerdts, Scott Ruhnke, and Steve Davis
Other non-members attending: several court reporters and two judges

1. Welcome and meeting overview

The meeting began at 9:30 AM. The committee's co-chairs, Chief Judge Charles Smith and Beth Baldwin, welcomed the committee and reviewed the agenda.

2. Presentation by For the Record (FTR), Inc.

Two representatives from FTR's home office in Phoenix, AZ, conducted the presentation. The key points of the presentation include:

- FTR has more audio recording systems in courtrooms in the U.S., Australia, and elsewhere than any other company; many in Illinois and Missouri
- Their systems are sold and installed by more than 200 resellers in the U.S. – including Pratt A/V in Des Moines and two others in Iowa
- FTR offers three general types of digital audio recording systems:

(1) FTR Reporter Deck 2: a stand-alone hardware solution; built for FTR by Marantz:

- a. 4 channels (separate tracks that can be isolated during replay/listening)
- b. 40 Gigabyte internal hard drive (500 hours of audio recording)
 - Saves the last 500 hrs only (62 eight-hour work days = 3 months)
 - Will not over-write files on HD until they have been archived
- c. Linux operating system
- d. Automatically saves to the hard drive and the network (if set to do so)
- e. Can archive to the network or a CD (9.5 hrs/CD)
- f. Creates files in a proprietary format that can be replayed using FTR's free audio player (downloadable by anyone from FTR's website) – which allows listener to isolate up to 8 channels/tracks when listening; can save the files in an MP3 format, but you lose ability to isolate tracks

(2) FTR Reporter Gold 5.X: a computer & software solution that includes:

- a. Windows Vista compatible
- b. 4 channels (default), but can capture 8 channels (optional)
- c. Can be used to capture & manage video
- d. Can add FTR's Log Notes software to annotate the audio/video record
 - i. Can be done by courtroom staff, by the judge, or both
 - ii. Each annotation automatically given a timestamp
 - iii. Can search on annotation date, text, etc.
 - iv. Can add more notes after hearing is completed
 - v. Log notes are saved separately from audio file
- e. Audio files can be sealed by setting option at start of hearing or after hearing is completed; saved to a secure folder on the network or a CD

- f. Audio files are saved in five-minute segments; can never lose more than 5 minutes of recording
- g. Transcripts from audio files can include hyperlinks to time stamps in the audio file; need Wordlink to do this (an MS Word-based utility)
- h. Can use Record Edge, an additional development tool, to integrate audio files into the case management system

(3) Portable System includes 4 (or 8) microphones & a small audio mixer

- a. Transportable in a luggage-type case with a handle and wheels
- b. The mics plug into the mixer; the mixer plugs into a laptop or desktop

- FTR service: 24/7 technical assistance hotline
 - Local/regional vendors provide on-site service
- Costs (assuming a large order)
 - Reporter Deck 2 systems: approximately \$4000 per courtroom for basic system (4 mics)
 - Reporter Gold 5.X systems: \$8000 to \$10,000 per courtroom for hardware and software
 - Ongoing service & support
 - Software: 5% of the software purchase price per year
 - Hardware: support provided through local resellers/vendors (varies)
 - Support for daily operation: best practice is to have a courtroom staff person monitor the equipment and enter annotations; but not all courts do this
- Keys to obtaining an accurate & complete audio recording:
 - High quality microphones & audio mixer
 - Expert installation
 - Best practices in managing court proceedings

3. **Presentation by Court Smart Digital Systems, Inc.**

- Presentation by the CEO (from Massachusetts) and the Director of Midwest Sales (from Chicago)
- Founded by CEO in 1995
- The company has been on the Inc. Magazine list of 500 fastest growing companies 4 consecutive years; nominated again this year
- They emphasize that they offer an “Enterprise Class” solution for courts
 - Any A/V company can set up an effective digital recording system in individual courtrooms
 - Large enterprises (like state court systems) with many locations need to efficiently and effectively manage the recording systems and to integrate the digital recordings into their case management systems and to enhance services to their clients/customers
 - This is Court Smart’s strength
- Court Smart has implemented (or is in the process of implementing) centrally managed digital recording systems in:
 - Many of the state courts in Florida
 - All of Alaska’s state courts (which used to use FTR)

- Most Superior (trial) Courts in New Jersey
- Hennepin Co. (Minneapolis) and Ramsey Co. (St. Paul), MN
- Du Page Co. (Wheaton), IL – which they claim is the best-managed digital recording system in any courthouse in the U.S.
 - 28 centrally-managed courtrooms for the past 10 years
 - They have never lost a single minute of audio recording
 - Saved the court \$5 million in the last three years
 - A certified court reporter manages the program
 - Court reporters monitor multiple courtrooms from a central location
- Components of their enterprise class solution
 - Centralized monitoring & management of digital recordings
 - Multi-level security for access to digital recordings
 - Passwords for users
 - Individualized levels of access tailored to (for example):
 - Judges
 - Attorneys
 - Staff
 - Public
 - No other vendor offers this feature
 - Cannot erase or modify digital recordings with Court Smart
 - Sealing digital recordings is an option: can require randomly assigned password to access it
 - Link digital recordings to case management system
 - Remotely monitor and manage recordings from a central location
 - Can completely automate recording start and stop times; avoid human error
 - Video conferencing can be integrated into the system
 - Judge could do video arraignments from any location
 - Video integrated for use in courthouse security
 - Evidence presentation (audio/video) can be integrated into system
 - Fully automated backup and archival of recordings (best system on the market)
 - Can generate reports on each courtroom (who logs onto system; hours of recording; etc.)
- No proprietary hardware in a Court Smart system
 - Use standard top quality name brand, microphones, cameras, audio/video mixers
- Court Smart software for managing the system will run on all Windows-based computer systems with ODBC compliant databases (ICIS uses Oracle for its database; it is ODBC compliant)
- Blue light on judge's bench – when ON: indicates system is recording; will flash when a microphone is turned off or the system is not recording
- Software for entering & managing log notes/annotations
 - Each annotation automatically time-stamped
 - Searchable by text, time, etc.

- Costs (per courtroom)
 - Basic digital audio system: \$18,000 to \$20,000; includes:
 - Installation by Court Smart technicians
 - 1 year warranty
 - 5 microphones, cables, wiring
 - audio mixer; sound card
 - software for management and annotations
 - Additional features cost more
 - Video (\$500 per camera plus wiring & installation)
 - Evidence presentation (\$5000)
 - Video conferencing
 - Public address (PA) system
 - Annual maintenance/service fee from Court Smart = 12% of hardware and software purchased from CS (per year); if \$20,000 per courtroom – this would equal \$2400 per year.
 - Replace servers every 3 to 4 years (mission critical equipment)
- Need for court staff to monitor equipment in courtroom?
 - Practices vary; not necessary where there system is monitored from a central location
- Any proof of the accuracy of digital recordings?
 - No definitive study
 - Depends on: high quality equipment and installation; effective management of the court proceedings; and expertise of transcriptionists
- Recording in judges' chambers?
 - Use wireless microphones or mics installed in chambers
- Recording of telephonic testimony?
 - Conference phone can be integrated into audio system
 - Treat phone as a separate channel – like a microphone

Lunch break at 12:40 PM

Committee re-convened at 1:10 PM

4. Presentation by Jefferson Audio Visual Systems (JAVS), Inc.

- Presentation by two professional staff from JAVS' home office in KY
- JAVS installed its first A/V system in a courtroom in 1985
- 1998 – introduced its first digital video recording system
- Have installed systems in 3000 courtrooms in 33 states, Canada, Australia, and Malaysia; from Las Vegas, NV (40 courtrooms) to Rabbit Patch, KY (1 courtroom)
- KY courts use JAVS statewide; many courts in Michigan also use JAVS
- Massachusetts' courts are currently implementing JAVS statewide
- They have 3 levels of turnkey systems – for small, medium, and large venues
 - Basic system: digital audio only
- JAVS believes that audio is not sufficient for creating a clear, accurate record
 - Video allows you to know who is speaking, plus see expressions of witnesses

- Kentucky court system uses JAVS – one central monitor for 3-4 courtrooms
 - The video recording (on DVD) can be used as the record on appeal
 - Log notes link to the time stamp on the video
 - On appeal - attorneys note the time segment(s) at issue on the video
- Components of a JAVS video system – which would be installed by JAVS technicians:
 - Digital recorder (JAVS manufactures its own 4-track audio mixer)
 - Case scheduler
 - Auto Log
 - JAVS scheduler
 - JAVS viewer
 - JAVS finder
 - JAVS server (optional)
 - A PA system is part of the standard JAVS installation
- All recordings are in a nonproprietary format (WMV), viewable on any Windows Media Player (on computer) or standard DVD player
 - Standard 4-track recording; plays in 5.1 surround sound (which makes 4-track better)
 - With video -- you can see who is speaking, so 8 tracks are not necessary
 - High quality, very sensitive microphones and audio mixer
 - JAVS presenter walked to the back of the courtroom while speaking in a normal voice (volume), then replayed the recording; his voice and words could be heard on the recording
- JAVS' Level 1 (Precision) System - basic audio only: \$13,000 to \$14,000 installed
 - JAVS' audio/video mixer (with optional video input)
 - 2 recorders: automatic backup; fail safe strategy
 - 8 microphones – recording onto 4 tracks
 - Software for managing recordings
 - Audio only: the computer screen includes a blue rectangle (where video would be shown with a video recording system)
 - Inside the blue rectangle: identifies the 4 tracks as:
 - Judge
 - Attorney-Left
 - Attorney-Right
 - Witness
 - 2 zoned PA outputs
 - Installed by JAVS' technicians: hide all wiring, set up & test equipment
- JAVS' Level 2 (Precision Plus) System: audio & video:
 - All features of basic system plus:
 - 2 video inputs
 - 2 zoned A/V outputs for A/V conferencing
- JAVS' Level 3 System: Advanced options for multi-camera courtrooms
 - Cost depends on options; up to 12 video & 20 audio inputs
 - Some KY courtrooms with “all the bells & whistles”: \$40,000 - \$50,000
 - Multiple cameras in courtroom – plus in chambers

- Evidence presentation system
 - Central monitoring
 - All the software options
- Evidence of the accuracy of the recordings?
 - No study on this issue
 - Talk to judges and attorneys who have used the system for years; the quality of the record from JAVS' systems is what sells the systems
- JAVS is limited to 4 channels/tracks; wouldn't 8 tracks be better?
 - You can see who is speaking on video; don't need 8 tracks as you might in an audio-only system
 - Many basic audio-only systems use only 4 tracks and that seems to be OK for most courts
- How does JAVS deal with old courtrooms that have bad acoustics?
 - You need a highly skilled and experienced installer
 - JAVS uses its own technicians for installation and service
- Can JAVS provide central monitoring and management of the system?
 - Central management is built into JAVS' systems; it's easy with JAVS
 - Las Vegas: 40 courtrooms in 1 building; centrally managed
- Annual service fees?
 - 10 – 12% of the initial sale price
 - 24/7 tech help line; can do remote diagnosis
 - Express mail parts or get technician to site next day, if necessary
 - So many Michigan courts use JAVS, the company has 5 technicians who reside in MI
- Security and backup of recordings?
 - Each courtroom has its own recorder/hard drive plus backup to network
 - If one recorder malfunctions, it doesn't affect others in the courthouse
- Ability to integrate JAVS recordings with the case management system?
 - They are working on this; should be ready by January 2010

5. Presentation by High Criteria, Inc. (Liberty Court Recorder)

- Presentation by one of the owners of High Criteria; three partners have been friends since childhood
- Company began in 1998 with its product: "Total Recorder" – a software program for recording audio on a PC
 - Sold more than 200,000 copies of Total Recorder
- Launched "Liberty Court Recorder" software in 2004
- Have sold more than 3500 in the U.S. & Ontario
 - 1,200 NY State Courts, as selected by the NY State Office of Court Admin.
 - 150 in MN
 - 400 in NC
 - 50 in AR
 - More than 100 in each of these states: AZ, CA, OH, MI, NJ, and TN
- High Criteria distributes its software through local & regional A/V vendors
 - They believe it's best to have local installers and service providers
 - Their vendors use high quality, standard, nonproprietary equipment

- Advantages of Liberty Court Recorder (software)
 - Very user-friendly interface; can train a court clerk how to use the basic features and effectively record and annotate the proceedings in 5 to 10 minutes
 - Certified by Microsoft to be compatible with Windows XP, Vista, and version 7 (when released)
 - Minimal computer system requirements
 - Easy on-screen monitoring of each channel
 - Simple file and folder structure for storage of recordings
 - Includes very sophisticated noise reduction and “gain control” for obtaining clear audio recording – which is more important than having 4 or 5 cameras in a courtroom
 - Automatically (in real time) records to hard drive and a network drive (or CD)
 - Can easily archive to a network drive or to CDs
 - Can record from 1 to 12 discreet channels – and isolate channels during playback using their free Liberty Court Player
 - Log Notes/Bookmarks utility is very easy to use, but also has advanced features
 - Automatically time-stamps log entries
 - Many log entries using pre-set abbreviations
 - Search log entries, which are linked to the time-stamp on the audio recording for easy search and playback
 - Can export all or part of a recording to a PDF file, which can be emailed
 - The PDF file opens like a document with all the bookmarks (annotations) next to time-stamps that are hyperlinks
 - Click on a time-stamp/hyperlink and it plays the recording starting at that point
 - Can play back a segment of the proceeding while the system simultaneously continues to record
 - Can incorporate and manage video recordings with Liberty Recorder
 - Integrated file saves audio, text notes, and video into a single standard file
 - Can import the list of cases on the docket into Liberty Recorder; click on the next case – and automatically enter the case name (or other info) into the annotations – with a time stamp indicating when that case began
 - Easily installed and used on a laptop for portable recording systems
 - Add a small audio mixer and microphones
- Estimated costs (from HC’s response to the RFI); resellers’ prices might vary:
 - \$3,395 - Liberty Court Recording Software
 - \$850 - Standard Recording PC with Monitor, mouse and keyboard
 - \$1,299 - Multi-channel sound card and pre-amp
 - \$1,650 - Microphones (package of 4)
 - \$495 - Video capture card
 - \$770 – 1 video Camera, power supply, mount, lens and cable
 - \$8495** – Total cost for basic software and equipment package (excluding installation)

\$600 – to expand recording from 4 channels to 8 (max. 12)

\$400 – digital courtroom clock

Additional costs to provide utilities for integrating court docket into Liberty Recording program and for various enhancements to the management of video recordings.

- Confidence monitoring: by viewing channel indicators on PC screen and by listening to recording in real time on head phones
- Any proof of the accuracy of the recordings from your system?
 - No studies on this issue
 - Need high quality microphones, mixer, sound cards
 - Need 4 to 8 microphones; uni-directional (not omni-directional)
 - Need experienced installer to place the microphones effectively
- Can your system be integrated with a central monitoring & management system?
 - He doesn't recommend this strategy; try to keep it simple
 - This requires at least one camera in each courtroom being monitored
 - Adds another level of complexity
- The recording system produces 30 megabytes of audio files per hour (audio only)

Break at 4:30 PM

6. Discussion of preliminary recommendations from the DART Evaluation Subcommittee

- a. Committee members received a draft of meeting notes from a conference call conducted by the Evaluation Subcommittee, which was charged by the committee with making recommendations on how to best evaluate the reliability, accuracy, and costs of DART systems used in courts
- b. Darin Raymond summarized the subcommittee's discussion and preliminary recommendations:
 - (1) Costs: We received estimated costs from the vendors who responded to the RFI in June. We can also obtain cost information from courts that have been using DART systems for several years.
 - (2) Reliability of the technology and accuracy of the records it produces
 - (a) The subcommittee concluded that the most valid sources of information on these key issues would come from site visits to courts that have used DART for several years – and from sending surveys to court managers, judges, and attorneys in additional jurisdictions that have used DART for several years, but are too far away for conducting site visits.
 - (b) The subcommittee recommends inviting vendors to install their DART systems in some Iowa courtrooms for a 6 to 8 week test period. However, an evaluation of recordings obtained during a short test of DART in a few courtrooms should be given less weight by the committee than the assessments obtained from other jurisdictions that have used DART for several years.
 - (c) The subcommittee ran out of time during its discussion of how to evaluate recordings obtained from test courtrooms in Iowa – and tabled that issue for further discussion at a later date.
 - (d) However, the subcommittee did agree to recommend that the evaluation of digital recordings in the test courtrooms could be done by assessing

the clarity and completeness of the recordings (e.g., by determining the number of inaudible utterances per one-hour recording) -- without having to compare transcripts from a digital recording with the written transcripts from the court reporters for those proceedings.

- One committee member suggested that court reporters might welcome the comparison between their transcripts and those obtained from digital recordings – and we should give them that opportunity.
- c. Committee members want to be certain that there is some kind of assessment of the accuracy and completeness of the digital recordings obtained during the test period in some Iowa courtrooms.
 - (1) Members want to evaluate at least some recordings from different settings (e.g., juvenile court, high volume criminal court, serious criminal trials)
 - (2) The Evaluation Subcommittee should develop a proposal for conducting such an evaluation.
 - (3) It is important to understand, however, that there are many potential factors that can affect the outcome of such an evaluation – and a small sample of recordings cannot provide statistically significant results. This is why the subcommittee recommends that the findings from other jurisdictions where DART has been used for many years be given more weight than the evaluation of a small sample of recordings made during a short test period in Iowa.
 - (4) Chief Judge Smith indicated that he would contact all the other chief judges and ask them to nominate at least two courtrooms in their respective districts where vendors might install their DART systems. At its meeting on July 31, the full committee will decide which courtrooms will become the test sites.

7. Discussion of the presentations by the four vendors today

- a. General agreement that the presentations were interesting and well-done
- b. They varied from a “keep it simple” approach to very high-end, centrally managed digital systems
- c. At some point, some direction will have to be provided on whether we are expecting a simple \$10,000 car or a high-end \$40,000 car
- d. The Iowa courts already have an excellent centralized case information system and will soon begin implementing a centralized electronic filing and document management system. Consequently, if the committee concludes that DART is reliable and produces an accurate record -- the state courts will probably want to centrally manage at least the back-up and archiving of digital recordings.
- e. One member reiterated the point made by one of the vendors that the accuracy of digital recordings depends on the quality of the equipment and installation. It will also be affected by how well judges insist that attorneys and parties follow protocols for creating a digital record of proceedings.

8. Next meeting: Friday, July 31 at 9:30 AM at the Judicial Building in Des Moines

9. Meeting adjourned at 5:25 PM